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TO : The Files - RD-76, Task Order I

DATE: 28 May 1959

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SUBJECT: (Trip Report - Time Event Marker)

1. On 21 and 22 May 1959 a trip was made to the [redacted] Primary purpose of the trip was to monitor the progress of the subject task. The project was discussed with the following cognizant personnel:

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2. The subject task provides for the fabrication of ¹⁵16 IN-7 time event markers (TEM) and the development of one ruggedized IN-7 (TEM-A) prototype. Initial development of the IN-7 unit was accomplished under RD-76, T.O. C. The TEM and TEM-A are miniature time code generators (5" x 1-3/4" x 2") controlled by a watch movement. In the TEM the watch is driven by a manual wind negator spring which when fully wound will provide operation for a 60-day period. In the TEM-A the watch is driven by an electrically operated solenoid which pulses the watch winding mechanism once per minute. In this manner operation of the unit will continue for a period determined by the external battery source. When TEM is electrically interrogated a series of pulses is presented at the output terminal. This is a binary coded time group representing the number of lapsed minutes from the time of activation. The TEM will be used with ELINT systems to denote the time that sample signals are recorded.

3. The fabrication of ¹⁵16 IN-7 units was discussed in detail because of a reevaluation of the production schedule by the contractor, which indicated the possibility of a delay in meeting the delivery dates specified. The first unit was delivered 8 May 1959 and the second unit at the time of this visit was in the final assembly stage. An Additional 3 man days will be required for testing. At this rate delivery of the units by September did not seem possible. This is primarily due to the lack of available manpower for assembly of the units. The contractor is making an attempt to correct this situation by obtaining additional assembly manpower. Upon review of the contract and delivery schedule as stated in the proposal cover letter and the proposal accepted for this task, there appears to be a discrepancy in the delivery schedule. The proposed cover letter requested a one-year task and the delivery schedule including all deliverable items in the proposal is based on a 9-month program, which the contractor has been trying to meet. The contractor has stated that he will continue his effort to meet the 9-month program.

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4. The portion of the program providing for the development of a ruggedized version of the TEM was also discussed in detail due to a few doubts that the contractor had as to the ability of the unit to meet the specifications presented by this task. They have been going on the assumption that the equipment would be subjected to an environment test which would contain all of the environmental specifications at the same instant of time. Under this assumption if the temperature of the unit was at -40° Centigrade and the terminal voltage was down to 5.5 volts, failure could possibly occur when the unit was being subjected to the maximum shock and vibration specified. However all of these conditions, including a shock in the wrong direction, would have to occur at a precise interval of time. The possibility of all of these conditions occurring at the same time appears to be too remote to justify the amount of additional effort that would be necessary; therefore, the writer suggested that the contractor should continue to strive for the best possible operation of the unit without overextending the scope of the task and consider his previous assumption that all of these conditions could happen at the same time as a design goal.

5. The writer informed the contractor that the following parameters should be used when testing the equipment to meet the specification of the task. For shock, vibration and temperature specifications - a battery at normal room temperature with a 6 volt terminal voltage should be used. Proper operation of the equipment at normal room temperatures should be over a voltage range of 5.5 volts to 6.5 volts. We also discussed what should be provided in the unit to reduce the moisture which would normally be present in the unit. It was requested that a replaceable desiccant with visual indication of its condition be provided and as added protection the unit will be filled with an inert gas and hermetically sealed prior to delivery.

6. Most of the basic design has been completed and most of the sub-assemblies of the unit have been fabricated in breadboard form and tested. Future work will be to finish the basic design and sub-assembly work then final fabrication and testing of the unit will be started.

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